



OFFICE OF THE
CITY ENGINEER
Public Works Building
P.O. Box 40
944 James Street
Woodstock, ON
N4S 7W5
Telephone (519) 539-1291
Fax (519) 421-3250

ITEM #B -
ENGINEERING DEPARTMENT
December 22, 2006

TO: Paul Bryan-Pulham, Chief Administrative Officer
FROM: David Creery, City Engineer
RE: **VEHICLE ACTIVATED TRAFFIC CALMING SIGNS**

AIM:

To report on the performance of the Vehicle Activated Traffic Calming Signs (VATCS).

BACKGROUND:

Staff presented a Road Safety report to City Council in 2004. The report identified six locations where speeding complaints were received and speeding (as measured by traffic counter) was identified as more predominant. These locations included:

- Finkle Street @ Spencer Street
- Lansdowne Avenue @ John Davies Drive
- Lansdowne Avenue @ Mohawk Street
- Bowerhill Road @ city boundary
- Devonshire Avenue west of Wellington Street North
- Huron Street north of Sydenham Street

Four (4) Vehicle Activated Traffic Calming Signs were approved in the 2006 capital budget as a response to the numerous speeding complaints in the City.

The VATCS were located at four of the identified locations including Finkle Street, Lansdowne Avenue @ John Davies Drive, Bower Hill Road, and Huron Street south of Sydenham Street. The cost to install the signs was approximately \$28,000.

The Vehicle Activated Traffic Calming Signs (VATCS) were installed and placed into covert operation for a period of two weeks to gather background speed data. Covert operation is the logging of speed data without the sign display to warn drivers that they are speeding. The signs were then placed in normal operation. In normal operation mode the signs light up displaying a speed limit graphic or a road hazard graphic (Lansdowne only) when an approaching vehicle is traveling faster than a pre-set

speed. The intention is to trigger a driver traveling faster than the speed limit to look at the speedometer and respond with a reduction in speed.

.../2

COMMENT:

➤ **Finkle Street @ Spencer Street**

	Total Vehicles	85th Percentile	50th Percentile	Speed > 70 km/hr	Speed >80 km/hr	Speed >90 km/hr	Speed >100 km/hr
Traffic Counter May 2003		63.5 km/hr	52.5 km/hr				
Traffic Counter June 2004		63.1 km/hr	53.4 km/hr				
Covert Sign Operation Aug 23-Sept 6 (14 days)	28,672	64 km/hr	56 km/hr	816 vehicles	50 vehicles	6 vehicles	0 vehicles
Sign Active Oct 27-Nov 8 (12 days)	19,648	59 km/hr	50 km/hr	318 vehicles	24 vehicles	6 vehicles	3 vehicles
Sign Active Oct 27-Dec 4 (39 days)	65,536	59 km/hr	50 km/hr	1081 vehicles	85 vehicles	16 vehicles	5 vehicles

- 85% of vehicles are traveling 5 km/hr slower with the sign in operation
- 50% of vehicles are traveling 6 km/hr slower with the sign in operation
- 40% reduction in the number of vehicles traveling faster than 70 km/hr

➤ **Bower Hill @ City Limit**

	Total Vehicles	85th Percentile	50th Percentile	Speed > 70 km/hr	Speed >80 km/hr	Speed >90 km/hr	Speed >100 km/hr
Traffic Counter June 2004		67.3 km/hr	57 km/hr				
Covert Sign Operation Aug 23-Sep 6 (14 days)	18,944	63 km/hr	54 km/hr	647 vehicles	73 vehicles	11 vehicles	2 vehicles
Sign Active Sep 25-Oct 19 (25 days)	44,672	56 km/hr	49 km/hr	446 vehicles	47 vehicles	4 vehicles	1 vehicles
Sign Active Nov 8-Dec 11 (34 days)	57,344	55 km/hr	48 km/hr	473 vehicles	70 vehicles	8 vehicles	0 vehicles

- 85% of vehicles are traveling 7-8 km/hr slower with the sign in operation

- 50% of vehicles are traveling 5-6 km/hr slower with the sign in operation
- 70% decline in the number of vehicles traveling faster than 70 km/hr

➤ **Huron @ Sydenham**

	Total Vehicles	85 th Percentile	50 th Percentile	Speed > 70 km/hr	Speed >80 km/hr	Speed >90 km/hr	Speed >100 km/hr
Traffic Counter May 2003		62.8 km/hr	54.9 km/hr				
Covert Sign Operation Aug 23-Sep 6 (14 days)	65,536	60 km/hr	53 km/hr	811 vehicles	68 vehicles	21 vehicles	11 vehicles
Sign Active Sep 25-Oct 10 (16 days)	65,536	58 km/hr	50 km/hr	481 vehicles	54 vehicles	20 vehicles	7 vehicles
Sign Active Nov 10-Nov 23 (13 days)	65,536	57 km/hr	50 km/hr	466 vehicles	42 vehicles	17 vehicles	6 vehicles

- 85% of vehicles are traveling 2-3 km/hr slower with the sign in operation
- 50% of vehicles are traveling 3 km/hr slower with the sign in operation
- 40% decline in the number of vehicles traveling faster than 70 km/hr

➤ **Lansdowne @ John Davies**

	Total Vehicles	85 th Percentile	50 th Percentile	Speed > 70 km/hr	Speed >80 km/hr	Speed >90 km/hr	Speed >100 km/hr
Traffic Counter May 2003		61.7 km/hr	53 km/hr				
Covert Sign Operation Sep 25-Oct 6 (12 days)	52,736	59 km/hr	52 km/hr	656 vehicles	54 vehicles	9 vehicles	3 vehicles
Sign Active Oct 6- Oct 19 (13 days)	58,496	57 km/hr	49 km/hr	614 vehicles	68 vehicles	9 vehicles	1 vehicles
Sign Active Oct 27-Nov 9 (14 days)	65,536	57 km/hr	50 km/hr	637 vehicles	63 vehicles	6 vehicles	2 vehicles
Sign Active Nov 10-Nov 23 (13 days)	65,536	58km/hr	50 km/hr	707 vehicles	46 vehicles	5 vehicles	3 Vehicles

- 85% of vehicles are traveling 1-2 km/hr slower with the sign in operation
- 50% of vehicles are traveling 2-3 km/hr slower with the sign in operation

- Minor positive and negative fluctuations in the number of vehicles traveling faster than 70 km/hr

Conclusion

The signs are effective in reducing the prevalence of speeding. The flashing speed limit or road hazard graphic creates a persuasion effect that appears to reduce 85th percentile speeds to less than 60 km/hr at all locations.

The sign effect at Bower Hill and Finkle is the greatest with a significant reduction in speeding. Both locations had the highest covert operation speeds of the four locations at 63 to 64 km/hr. Post sign activation speeds of between 55 km/hr to 59 km/hr indicate that there are a significant number of drivers who unconsciously or unintentionally travel at the higher speed. The data shows that the sign has a positive effect on driver behaviour resulting in slower speeds.

The sign effect at Huron and Lansdowne is less evident. Much of this is due to a lower background (covert operation) speed which was measured at between 59 and 60 km/hr. The speeds at these locations were higher, as measured by traffic counter, in 2003 and 2004. Post sign activation speeds of between 57 to 58 km/hr indicate that there is a limit to the persuasion effect of the signs. The traffic volume at both of these locations is significantly higher than on Finkle Street and Bower Hill Road. The “slow down” message may have a lesser impact on drivers when there are groupings of vehicles.

At all four locations the prevalence of speeding has been reduced to levels that are not defined as problematic.

The signs have maintained speed reductions over the last 3 months. Continued monitoring will determine if the persuasion effect is sustained.

RECOMMENDATION:

For Council’s information.

David Creery

David Creery, M.B.A., P. Eng.
City Engineer

*dc
11/12/06

Paul Bryan-Pulham, P. Eng.
Chief Administrative Officer